NEC

Portable Projector

# NP03CM Ceiling Mount Unit

## Installation and Adjustment Manual

Thank you for your purchase of the NEC portable projector ceiling mount unit.
Please read this installation and adjustment manual carefully to ensure proper use.

**Special skills are required for the installation of the portable projector. This work should never be performed by the customer.**

## To the Dealer and the Installer

**For the safety of the customer, we ask that the installation work be started after careful attention is paid to the strength of the mounting location to be sure it will withstand the weight of the portable projector and mounting hardware.**

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NEC Display Solutions, Ltd.

PRINTED WITH SOY INK Printed on recycled paper.

Printed in Japan
NP03CM-0604K-02

# Heed the Following

**This symbol alerts the user that important information concerning the operation and maintenance of this unit has been provided. The information should be read carefully to avoid problems.**

## ⚠ WARNING

- When installing the projector, be sure to do so as explained in this manual. The projector may fall and cause injury if it is installed improperly.
- To prevent the projector from falling, install it in a place and fasten it in a way with sufficient strength to support the combined weight (4.9 kg) of the projector (2.9 kg) and the ceiling mount unit (2.0 kg) for an extended period of time as well as to withstand earthquakes. Insufficient strength or fastening may result in the projector falling and causing injury.
- To ensure safety, be sure to tighten the bolts and screws securely. Also be sure to use the included units and other metal fittings. Failure to do so may result in the projector falling and causing injury.
- When sliding the opening of the mounting adapter over the pin of the ceiling attachment unit, check that the pin of the ceiling attachment unit is fully seated in the opening. If not, the projector may fall and cause injury.
- Do not modify any parts. Doing so may result in the projector falling and causing injury.
- Do not use broken parts. Doing so may result in the projector falling and causing injury. If a part should be broken, consult your dealer.
- Do not look into the lens when the projector is turned on. Doing so could damage your eyesight.
- Make adjustments as described in this manual.
  Incorrect adjustments may result in the projector falling and causing injury.

## ⚠ CAUTION

- Do not obstruct the projector's ventilation holes. Doing so will prevent the dissipation of heat and may result in fires. In particular, do not use the projector in the following ways:
  Do not install the projector in a wall or in a tight place where ventilation is poor, place a cover it, etc.

- Do not install the projector in front of the outlets of an air conditioner or heater or in a place where vibrations are strong.
  Doing so may result in fires.

- Do not install the projector in humid or dusty places or exposed to smoke or steam (such as near cooking equipment or humidifiers). Doing so may result in fires.

- When installing the projector, leave sufficient space between it and surrounding objects. Failure to leave sufficient space will prevent the dissipation of heat and may result in fires.

- When removing the screws on left and right on the mounting adapter, be sure to support the projector while doing so. Failing to do so may result in the projector swinging back abruptly and causing injury.

- for PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

## Installation Precautions

- Special techniques are required for the installation work of the projector and installation work should only be undertaken by qualified and licenced installers.

- NEC Display Solutions will not accept any responsibility related to any accidents or incidents due to insufficient or inferior mounting techniques.

## Installation Location

Avoid places of high temperature or low temperature.
(Ambient operating temperature: 0°C to 35°C)
Avoid places exposed to direct sunlight and the vicinity of ventilation holes of room air conditioning and heating.

Avoid rooms with a lot of dust, humidity, greasy smoke, or tobacco smoke.
Dirt will adhere to optical parts such as lenses and mirrors and this will cause a deterioration of image quality.

Avoid places in which the screen is exposed to direct sunlight or illumination light.
When surrounding light directly hits the screen, the image appears washed out and is difficult to view.

# Preparation

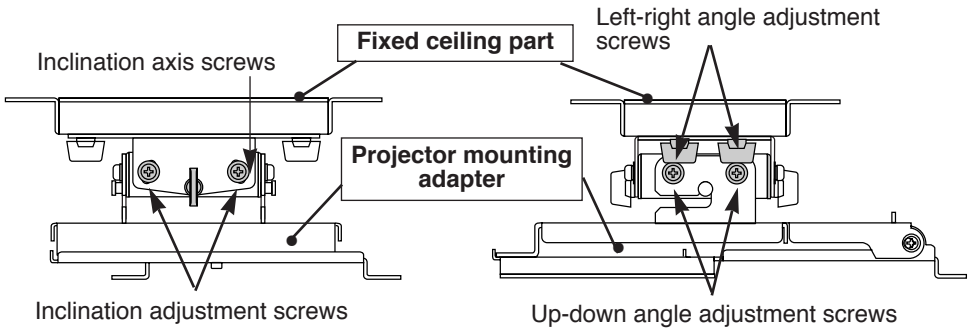
## ■ List of Packaged Parts

Fixed ceiling part ...1
Projector mounting adapter ...1
Projector mounting screws (M 4)...3
Up-down angle adjustment screws (M5 ) ...4
Installation and adjustment manual .....1

## ■ Required Tools

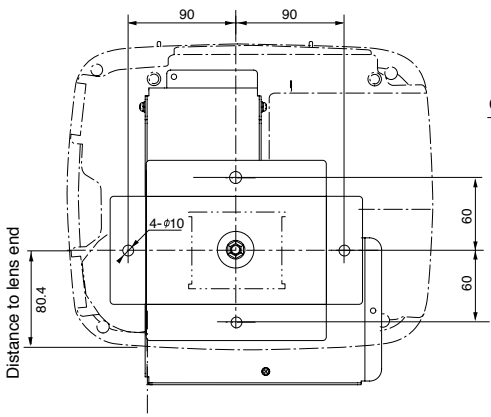
Phillips screwdriver

## ■ Names of the Parts

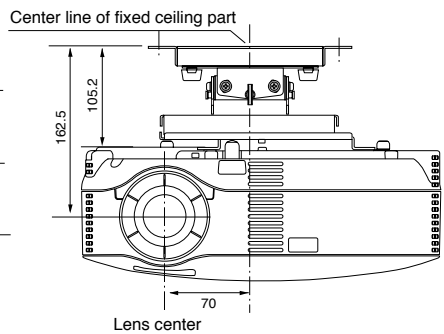



## ■ Dimensions (Unit: mm)

**Fixed Ceiling Part Bolt Hole Position Dimensions**




**Fixed Ceiling Part and Lens Center Dimensions Diagram**

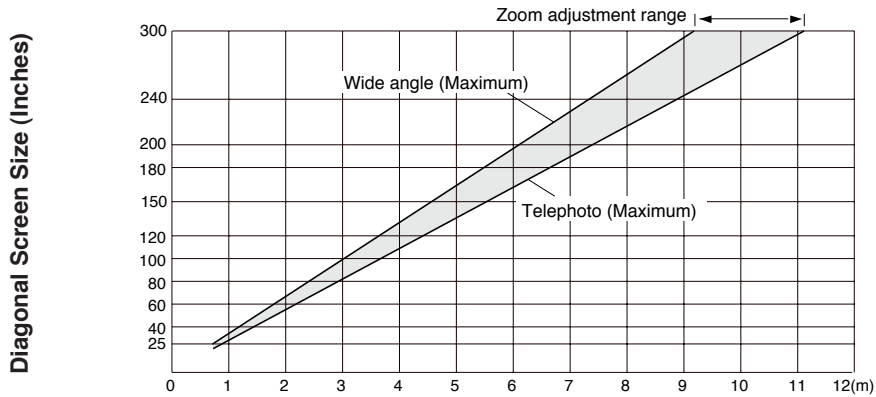


# Guide to Screen Size and Projector Mounting Position

## ■ Screen Size and Projection Distance ··· (VT580/VT480/VT58/VT57/VT595/VT590/VT491/VT490/VT59)

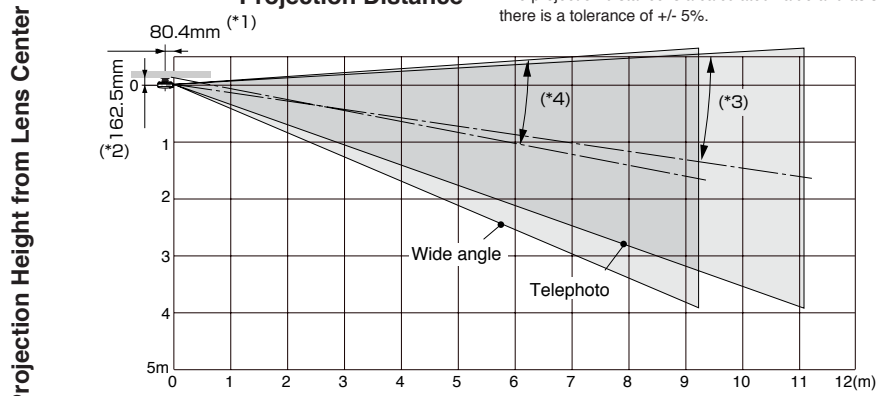
Use this guide when considering the distance to the screen and the screen size.

- The ceiling mount unit can be adjusted up and down a maximum of +/-10˚, but if too much of an angle is taken the image will show some distortion. Therefore, it is recommended that an adjustment is made in conjunction with the screen projection angle.
- Recommended screen sizes for projectors are from 21 inches to 300 inches. (Screen sizes represent the diagonal dimension.)




**Projection Distance**

The projection distance is a calculated value and as such, there is a tolerance of +/- 5%.




(*1) Distance from center of fixed ceiling part to end of main unit lens.

(*2) Distance of lens center from ceiling mount surface of fixed ceiling part.

(*3) The angle is 8.3 to 8.6˚ using a telephoto setting for distances from lens center (horizontal) to screen center.

(*4) The angle is 9.9 to 10.3˚ using a wide angle setting for distances from lens center (horizontal) to screen center.

### Using the Diagrams

Referring to the diagram, screen sizes that can be used at a projection distance of 3 m will range from 82 inches to 97 inches.

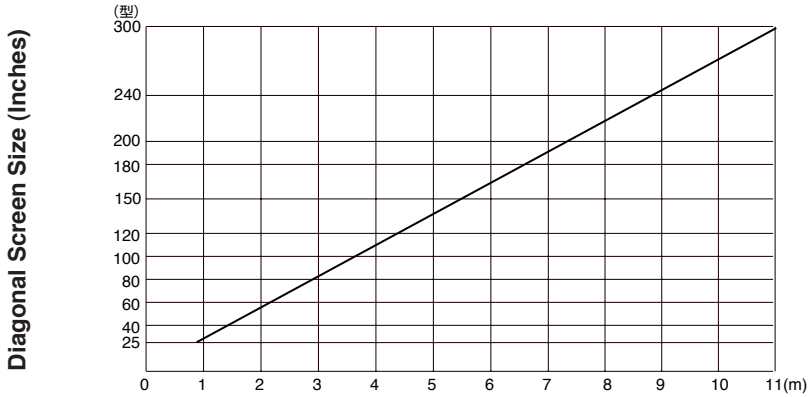
To project to a screen size of 200 inches, the projection distance will range from 6.2 m to 7.4 according to the diagram.

See Page 8 for the vertical and horizontal dimensions of the screen size.

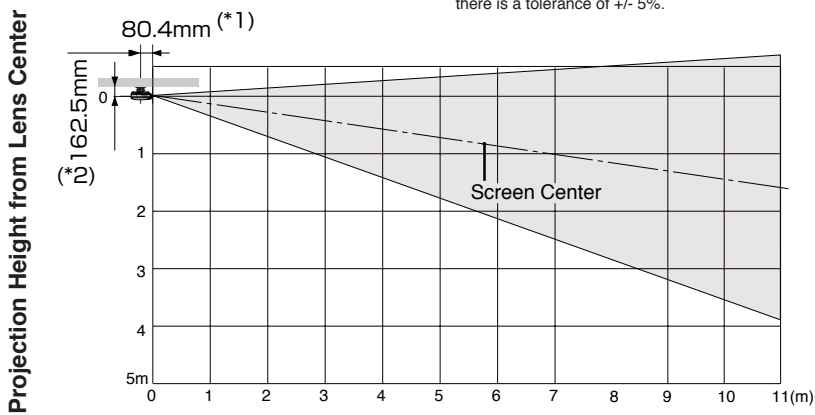
## ■ Screen Size and Projection Distance···VT48/VT49

Use this guide when considering the distance to the screen and the screen size.

- The ceiling mount unit can be adjusted up and down a maximum of +/-10˚, but if too much of an angle is taken the image will show some distortion. Therefore, it is recommended that an adjustment is made in conjunction with the screen projection angle.
- Recommended screen sizes for projectors are from 25 inches to 300 inches. (Screen sizes represent the diagonal dimension.)




The projection distance is a calculated value and as such, there is a tolerance of +/- 5%.




(*1) Distance from center of fixed ceiling part to end of main unit lens.
(*2) Distance of lens center from ceiling mount surface of fixed ceiling part.

### Using the Diagrams

Referring to the diagram, screen sizes that can be used at a projection distance of 3.7 m will range from 100 inches.

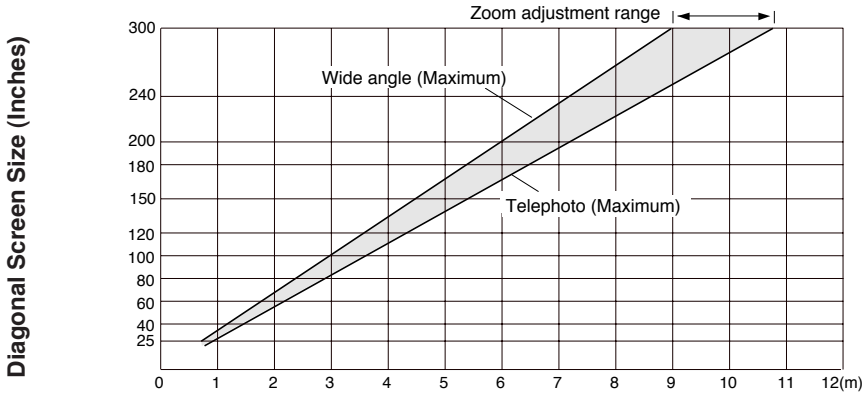
To project to a screen size of 200 inches, the projection distance will range from 7.3 m taccording to the diagram.

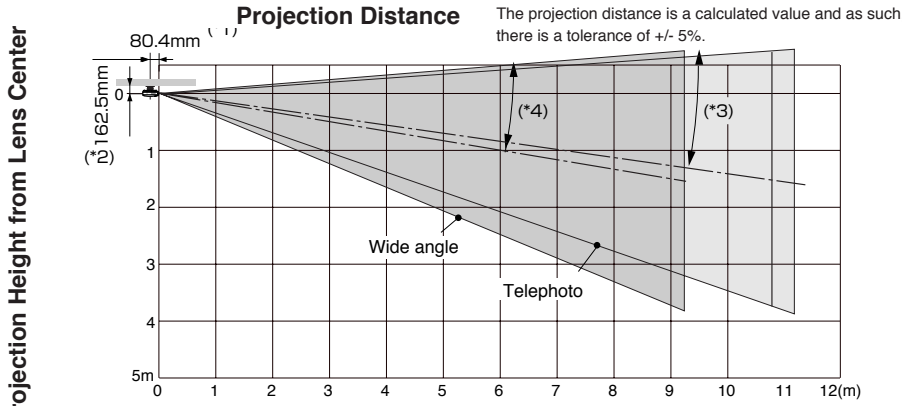
See Page 8 for the vertical and horizontal dimensions of the screen size.

## ■ Screen Size and Projection Distance···VT695

Use this guide when considering the distance to the screen and the screen size.

- The ceiling mount unit can be adjusted up and down a maximum of +/-10˚, but if too much of an angle is taken the image will show some distortion. Therefore, it is recommended that an adjustment is made in conjunction with the screen projection angle.
- Recommended screen sizes for projectors are from 21 inches to 300 inches. (Screen sizes represent the diagonal dimension.)




(*1) Distance from center of fixed ceiling part to end of main unit lens.
(*2) Distance of lens center from ceiling mount surface of fixed ceiling part.
(*3) The angle is 8.3 to 8.6˚ using a telephoto setting for distances from lens center (horizontal) to screen center.
(*4) The angle is 9.9 to 10.3˚ using a wide angle setting for distances from lens center (horizontal) to screen center.

### Using the Diagrams

Referring to the diagram, screen sizes that can be used at a projection distance of 3 m will range from 82 inches to 100 inches.

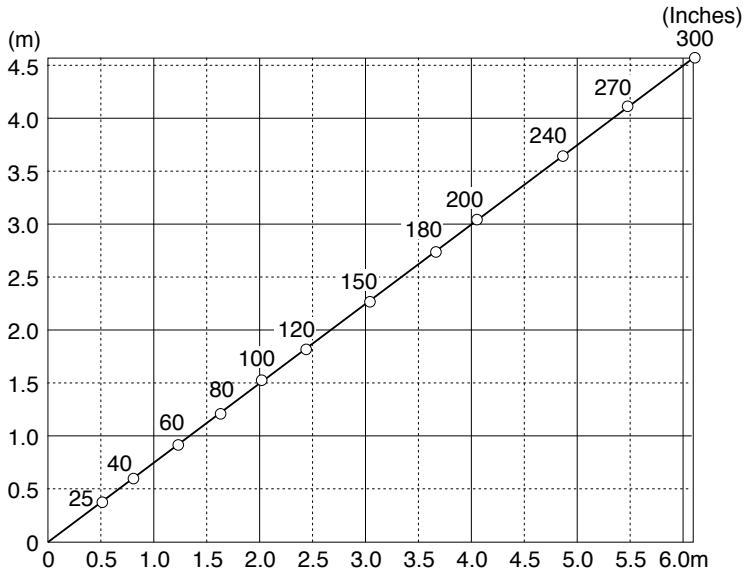
To project to a screen size of 200 inches, the projection distance will range from 6.0 m to 7.2 according to the diagram.

See Page 8 for the vertical and horizontal dimensions of the screen size.

## ■ Screen Size Conversion Table

### Using the Table

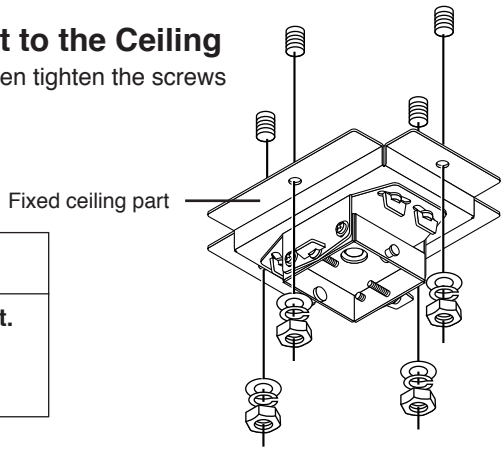
The dimensions of a 100 inch screen size according to the table will be approximately 2 m horizontally and approximately 1.5 m vertically.



# Mounting the Projector

## 1 Attach the Fixed Ceiling Part to the Ceiling

First, partially tighten the four screws, then tighten the screws firmly after positioning.



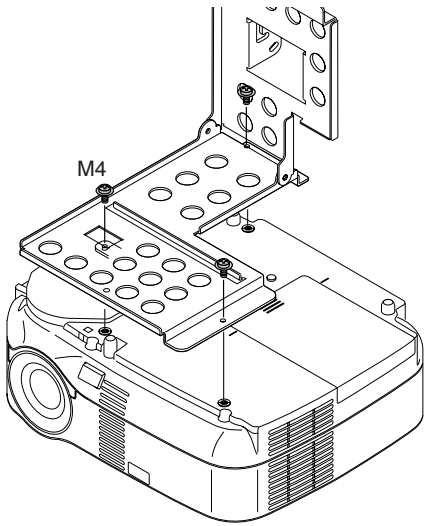

**⚠ WARNING!**

**Use M8 bolts for the fixed ceiling part. Use of types other than M8 could cause the projector to fall.**

## 2 Attach the Projector Mounting Adapter to the Projector

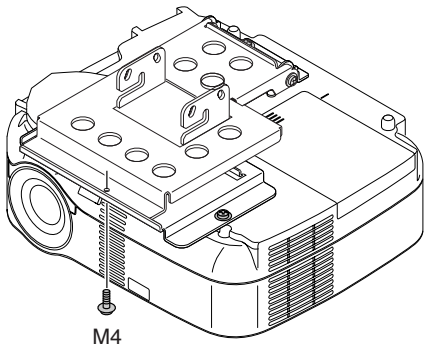
Remove the one screw from the front panel and open the projector mounting adapter. Use three M4 screws to mount the projector mounting adapter.

Next, close the projector mounting adapter and tighten the one screw on its side.




**⚠ WARNING!**

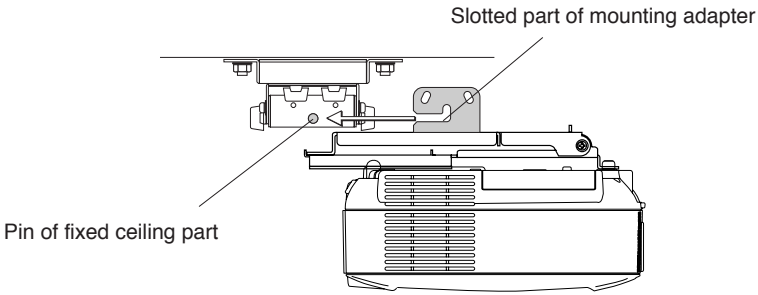
**Be careful not to catch your fingers when opening or closing the projector mounting adapter. Please use the specified screws; use of screws other than those specified may damage the projector.**



## 3 Suspend the Projector from the Fixed Ceiling Part

Slide the slotted part of the projector mounting adapter over the pin of the fixed ceiling part and push all the way to the back.

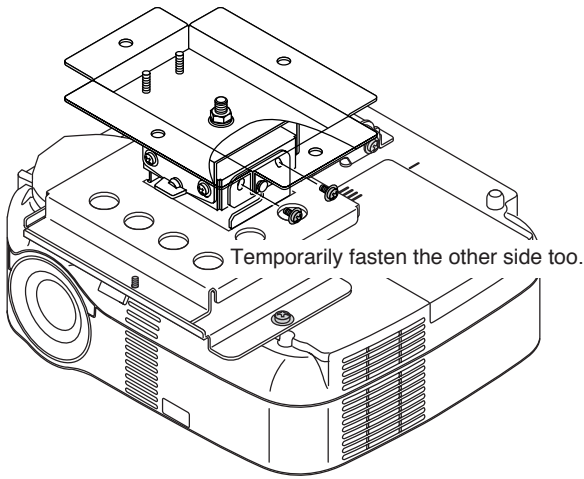
The projector is temporarily suspended in this condition and attention must be paid so that the unit does not fall since it is not fixed in place.




## 4 Temporarily Fasten the Projector Mounting Adapter

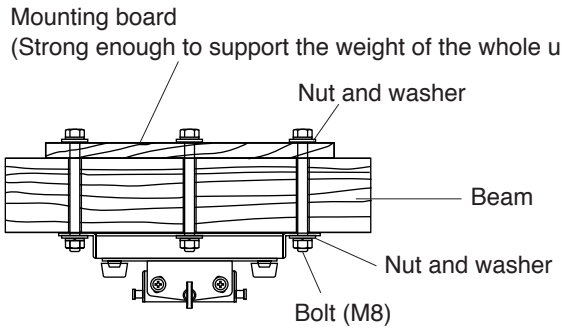
Temporarily fasten by partially tightening the four supplied (M5) screws.

Tighten firmly after completing the screen projection angle adjustment.

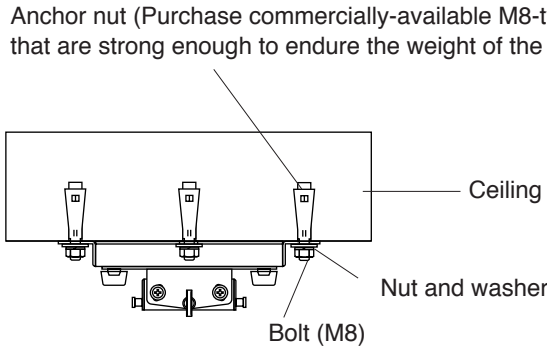


# Installation Examples

## ■When the Ceiling is Wood Construction:




## ■When the Ceiling is Concrete Construction:




**NOTE** : Mounting boards, M8-type anchor nuts, bolts, nuts and washers are commercially available.

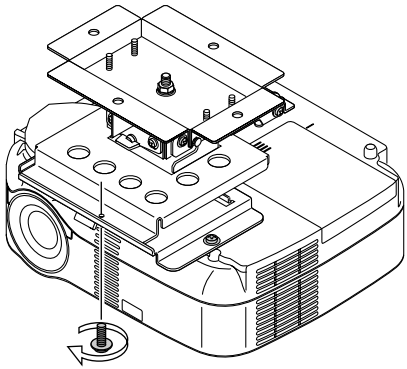
# Replacing the Lamp

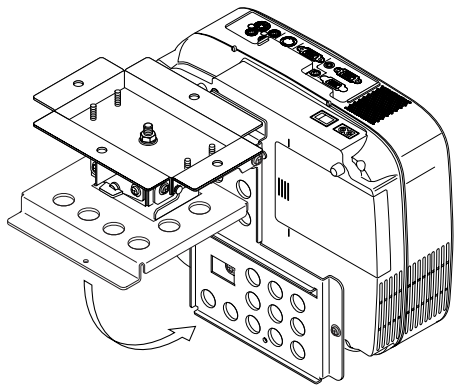
## ⚠ CAUTION!

**To replace the lamp, first switch off the power, wait for the cooling fans to stop and disconnect the power plug from the outlet. Now, wait about 60 minutes before replacing the lamp. Attempts to replace the lamp during operation or immediately after operation has stopped will cause burns because of the high temperature.**

## *1* Open the Projector Mounting Adapter

Remove the one screw from the front face of the projector mounting adapter. Place your hand underneath the projector so that the mounting adapter does not open suddenly.





## ⚠ CAUTION!

**Be careful not to catch your fingers when opening or closing the projector mounting adapter.**

## *2* Replacing the Lamp

Please refer to the instruction manual of the replacement lamp kit (Model VT85LP/VT80LP).

## ⚠ WARNING!

**When performing the lamp replacement work, take care not to exert force on the projector. Application of a large force could cause the projector to fall and cause injury.**

## *3* Return the Projector to the Original Condition

Follow the procedure in the reverse order to fix the projector mounting adapter in place.

# Adjustment of the Projection Angle

## Before the Adjustment

- **Refer to the instruction manual of the projector, switch on the power and project an image.**
- **Refer to the section "Orientation " of Setup and select the projection orientation. Select "Ceiling/Front" when projection is from the front side, and "Ceiling/Rear" when projection is from the rear side.**
- **Provisionally determine the projection size with the manual zoom, then perform the angle adjustment.**

**Adjustment of the projection angle should generally follow the steps described below.**

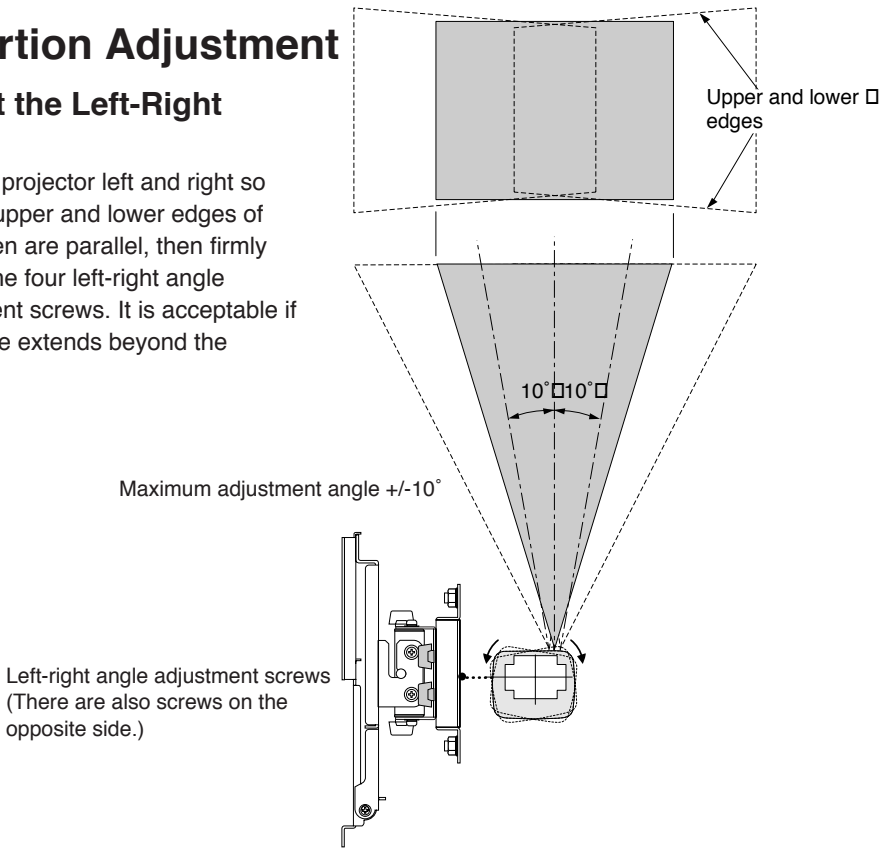
**1. Distortion Adjustment**
Adjust each of the left-right, up-down, and inclination angles so that the projected image becomes rectangular.
It is acceptable if the image extends beyond the screen at this time.

**2. Fine Adjustment**
adjust each of the left-right, up-down, and inclination angles of the fittings so that the projected image coincides with the screen.

## ■Distortion Adjustment

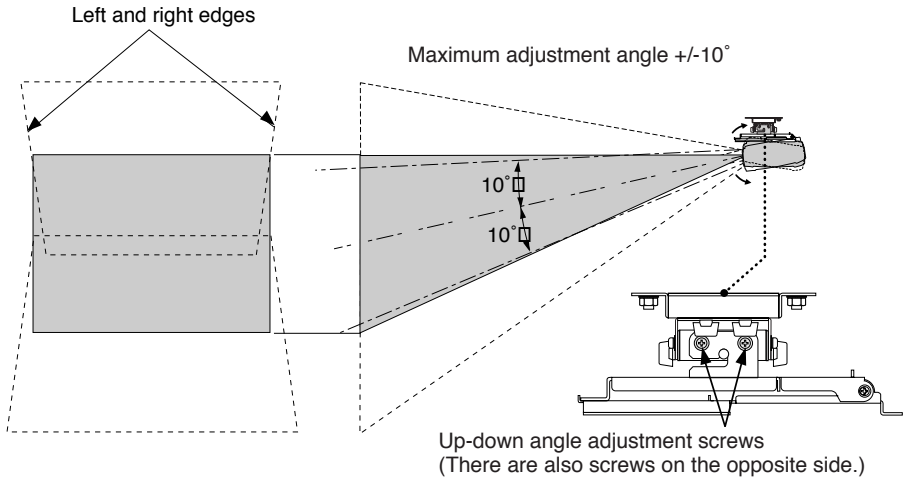
### *1* Adjust the Left-Right Angle

Turn the projector left and right so that the upper and lower edges of the screen are parallel, then firmly tighten the four left-right angle adjustment screws. It is acceptable if the image extends beyond the screen.



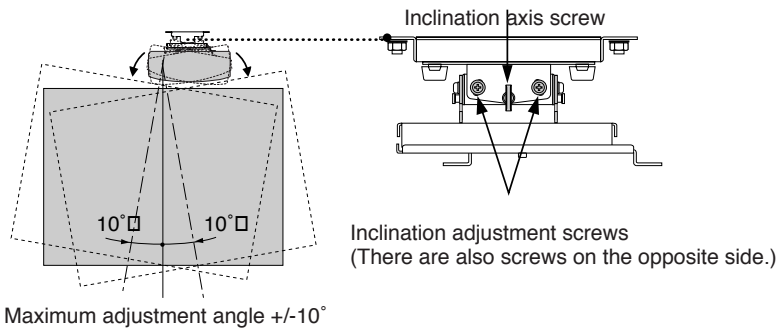
## 2 Adjust the Up-Down Angle

Turn the projector up and down so that the left and right edges of the screen are parallel, then firmly tighten the four up-down angle adjustment screws. It is acceptable if the image extends beyond the screen.




## 3 Adjust the Inclination

Adjust so that the image is projected to the screen without being slanted, then firmly tighten the four inclination adjustment screws. Lastly, tighten the two inclination axis screws if they are loose.




**If the adjustment does not work out, readjust from Step *1*.**

## ■Fine Adjustment

**Loosen the same screws that were used in the distortion adjustment and finely adjust the angle so that the projected image fits the screen, then tighten all the screws (i.e., a total of 14 including the inclination axis screws).**

**After the adjustments, check that the parts are fixed securely.**

# Specifications

| | |
|---|---|
| Product Name | : Projector Ceiling Mount Unit |
| Model | : NP03CM |
| Adjustment angle | : Up-down angle +/-10˚ |
| | Left-right angle +/-10˚ |
| | Inclination angle +/-10˚ |
| Dimensions | : 227 (W) x 263.8 (D) x 105.2 (H) mm |
| | (when assembled, not including protruding parts) |
| Weight | : Approximately 2.0 kg |
| Supplied Items | : Projector mounting screws(M4) .....3 |
| | Up-down angle adjustment screws (M5).....4 |
| | Installation and adjustment manual .....1 |

Specifications and design are subject to change without notice.

# MEMO